

**THE VALUE OF VOTING RIGHTS TO MAJORITY SHAREHOLDERS:  
Evidence from Dual Class Stock Unifications**

by

Shmuel Hauser\* and Beni Lauterbach\*\*

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**Abstract**

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\* School of Management, Ben-Gurion University of the Negev, Beer-Sheva, Israel, and Chief Economist, Israel Securities Authority, Jerusalem 95464, Israel.

\*\* *Corresponding Author:* The Anderson School at UCLA, 110 Westwood Plaza, Los Angeles CA 90095, USA; and School of Business Administration, Bar-Ilan University, Ramat Gan 52900, Israel. Fax: 310-2065455; e-mail: beni.lauterbach@anderson.ucla.edu or lauteb@popeye.cc.biu.ac.il

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## **Abstract**

We study transactions of voting rights. In our sample of 67 dual class unifications superior vote shareholders give up their superior voting status (all firm stocks become “one share one vote”), and receive (in most cases) compensation in the form of additional stocks. Based on the compensation granted, the median price of 1% of the vote is about 0.1% of firm’s equity. More interestingly, the price of vote decreases with institutional holdings, and increases with the percentage vote lost by the majority shareholders. The position and interests of the majority holders appear as the main determinants of the price of vote.

*JEL Classification:* G34

*Keywords:* Value of vote, majority shareholders, dual class stocks, closely held companies.

## ***1. Introduction***

The value of voting rights is an intriguing topic that has attracted extensive academic and practitioner interest before. Most of the existing evidence comes from examinations of dual class stocks. In the dual class stock system, the firm issues two classes of common stock: superior- and inferior-vote stocks. Previous research documents a price premium of superior vote (over inferior vote) stocks, which illustrates the positive value of voting rights.<sup>1</sup>

The purpose of this study is to present rare and relatively direct evidence on the value of voting rights. This becomes possible because of our unique sample of 67 dual-class stock unifications in Israel. (During the unification process all stock classes were converted into “one stock one vote” stocks.) Dual class stock unifications are sales of voting power from one class of investors to the other, and this study monitors the prices of these transactions, i.e., the compensation required for the loss of the superior-vote status. Further, the sample firms are closely held companies, controlled by majority shareholders. Thus, we offer a look at the value of vote to the “insiders” who control the firm.

In our sample, a typical price for 1% of the vote is about 0.1% of firm’s equity. However, this price varies considerably across firms, and it is strongly related to the position and perspectives of the majority shareholders. For example, the price of vote increases non-linearly with the vote loss of the majority holders. Institutional investors also appear to play a role – the compensation to majority holders is lower in firms with significant institutional holdings.

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<sup>1</sup> The price premium ranges from 5% in the U.S. (Lease, McConnell and Mikkelsen, 1983) to 82% in Italy (Zingales, 1994), with a typical value of 10%-20% - see Horner (1988) for Switzerland, Megginson (1990) for England, and Smith and Amoako-Adu (1995) in Canada.

The paper is organized as follows. Section 2 provides background, and presents the research issues and hypotheses. Section 3 describes the sample. Section 4 reports the empirical findings, and section 5 concludes.

## ***2. Background and research issues***

### **2.1. Motivation: A new empirical perspective on the value of voting rights**

The value of voting rights has been approached from two directions: the value to a small shareholder, and the value to majority holders. The value to a small shareholder is closely related to the chance that the voting right will become pivotal, for example, in a control contest. On the other hand, the value to majority holders is related to the superior cashflows they (the majority shareholders) can generate for the firm (providing they are in control), and to the private benefits they can extract – see the analysis in Grossman and Hart (1988) and Harris and Raviv (1988).

Existing literature examines market prices of superior vote stocks using the small investor perspective. Zingales (1995) argues (on p. 1053) that: “If, as is likely, the marginal investor is a small stockholder not directly involved in control, then the voting premium can only reflect the expectation that superior voting shares will receive a larger premium in case of a takeover.” Thus, analysis of price premiums of superior vote stocks correctly measures the value of voting rights from the perspective of a small shareholder.

It can be argued that in equilibrium the value of voting rights to a small stockholder is identical to the value of voting rights to the majority stockholders because the majority stockholders can always participate in trade when the market price of vote gets out of line.

However, it is possible that the majority stockholders' intervention is not automatic. Buys or sales of stocks may break the internal balance within the majority shareholders, and in most cases such transactions must be coordinated among the majority shareholders. It is likely that not all majority holders agree to buy and sell at the same time. For example, some majority holders might have a significant proportion of their wealth tied to the firm, and they could be reluctant to increase it. Hence, in many cases, only when market price of vote deviates considerably from its internally perceived value, insiders would intervene.

The frictions inhibiting majority shareholders' intervention may create a wedge between market assessed and insider assessed values of vote. We argue that the intra firm assessed value of vote is more accurate because in most cases insiders possess more information. Thus, it is interesting to try to estimate the intra-firm assessed value of vote.

In this study we examine direct sales of voting power initiated by the firm, most probably, by its majority holders. In our sample of 67 dual class stock unifications, superior vote stocks surrender their superior vote status, and receive (in most cases) compensation in the form of additional stocks. These direct voting power transactions should bring us closer to the intra-firm estimated value of vote.

## **2.2. Dual class capitalization and unification**

Dual class stock capitalization is a common financing tool in many economies. For example, Bergstrom and Rydqvist (1990) report that in the late 1980's over 70% of the firms listed on the Stockholm Stock Exchange issued dual class shares, and Zingales (1994) reports that about 40% of the firms on the Milan Stock Exchange had dual class stocks. Two dual class

systems are common. In the first, the inferior vote stock receives the same amount of dividends as the superior vote stock but has lower voting power. (For example, five inferior vote stocks are needed for one vote.) In the second, the inferior vote stock has lower voting power (or is nonvoting at all) but receives superior dividends.

Dual class stocks are prevalent in majority-controlled firms. The dual class system facilitates investors' segmentation. The majority shareholders can concentrate on superior vote stocks and establish a majority vote at low costs (sometimes without even owning a majority of equity) – see DeAngelo and DeAngelo (1985). Other (“outside”) public investors, who are less interested in control, can hold inferior vote stocks primarily, yet receive a fair share of the dividends.

In Israel, at the end of 1989, 40% of the firms traded on the Tel-Aviv Stock Exchange (104 firms out of 260) had dual class stocks. The superior vote stocks were always “one share one vote” stocks, while the inferior vote stocks were typically “five shares one vote” stocks. In all cases, superior and inferior vote stocks had identical per-share dividend distributions.

On October 1989 the Tel-Aviv Stock Exchange (TASE) together with the Israeli Securities Authority (the Israeli counterpart of the U.S. SEC) banned new issues of inferior class stocks. Companies wishing to raise capital could only issue superior class (i.e., “one share one vote”) stocks. The new regulation entered into effect on January 1990, and since then more than seventy firms decided to unify their dual class stocks. The unifications frequently preceded a secondary equity offer.

Since superior vote stocks were already “one share one vote” stocks, unification proceeded by transforming inferior vote stocks into superior vote stocks. Each inferior vote stock became a “one share one vote” stock at no cost to its owner. Sometimes though, the superior vote stockholders received compensation for agreeing to the stock unification. This compensation, when granted, was always in the form of additional “one share one vote” stocks issued by the company and distributed to superior vote stockholders free of charge.

An example can be useful. Suppose firm X has two superior vote stocks (with “one share one vote”) owned by the majority shareholders, and five inferior vote stocks (with “five shares one vote”) owned by the public. Upon unification, each inferior vote stock becomes a “one share one vote” stock, and the superior vote stocks remain “one share one vote”. If the unification proceeds with no compensation, the voting power of the majority holders (who held all superior vote stocks before the unification) declines from  $2/3$  to  $2/7$  while their share in equity remains  $2/7$ . If compensation is offered, say by granting (via private placement and for free) one additional “one share one vote” stock to the majority holders, their share in vote drops from  $2/3$  to  $3/8$  while their share in equity increases from  $2/7$  to  $3/8$ .

It is noteworthy, that a dual class unification with compensation required ratification by the Israeli Securities Authority (because it involved issuing more stocks). The Israeli Securities Authority (ISA) asked the company for a small prospectus-like document (that usually accompanies private placements) and an expert opinion on the compensation proposed. In about a third to a half of the cases, the ISA demanded clarifications from the company and often the process of unification with compensation took almost a year. In contrast, unifications without

compensation were completed within a week, and required only filing a short standard “Immediate Report” on firm’s decision to the ISA and TASE.

### 2.3. Measuring the value of voting rights

Dual class stock unifications can be perceived as simple sales of voting rights by superior vote to inferior vote stockholders. Alternatively, since voting rights are particularly important to the majority shareholders, dual class unifications can also be perceived as sales of voting rights by the majority shareholders to the rest of the stockholders.

Consider the superior-vote stockholders. Let:

$i$  = index for stock class.  $i=1$  for the superior vote stocks, and  $i=2$  for the inferior vote stocks.

$N_i$  = number of stocks in stock class  $i$ ,

$\gamma$  = number of inferior vote stocks needed for one vote,

$v_i$  = share of stock class  $i$  in total vote, and

COMP = total number of class 1 stocks granted as compensation.

Using these notations,

$$v_1(\textit{before}) = \frac{N_1}{(N_1 + N_2 / \boldsymbol{g})} \quad (1)$$

$$v_1(\textit{after}) = \frac{N_1 + \textit{COMP}}{(N_1 + N_2 + \textit{COMP})} \quad (2)$$

$$\Delta v_1 = v_1(\textit{before}) - v_1(\textit{after}) = \frac{N_1}{(N_1 + N_2 / \boldsymbol{g})} - \frac{(N_1 + \textit{COMP})}{(N_1 + N_2 + \textit{COMP})} \quad (3)$$

For giving up  $\Delta v_1$  voting power, the superior vote (class 1) stockholders receive compensation. The compensation increases  $e_1$ , the superior vote share in firm equity, from

$$e_1(\textit{before}) = \frac{N_1}{(N_1 + N_2)} \quad (4)$$

to

$$e_1(\textit{after}) = \frac{(N_1 + COMP)}{(N_1 + N_2 + COMP)} \quad (5)$$

Thus, the compensation in terms of proportion of firm equity is:

$$comp = \Delta e_1 = e_1(\textit{after}) - e_1(\textit{before}) = \frac{(N_1 + COMP)}{(N_1 + N_2 + COMP)} - \frac{N_1}{(N_1 + N_2)} \quad (6)$$

and the first possible measure of the imputed value or Price of Voting Rights ( $PVR_1$ ) is:

$$PVR_1 = \frac{comp}{\Delta v_1} \quad (7)$$

The alternative measure of the value of voting rights requires adopting the majority shareholders' perspective. Denote:

$\mathbf{a}_i$  = the share of the majority shareholders in stock class i, and

$v_c$  = the share of the majority shareholders in total vote.

Appendix A shows that:

$$\Delta v_c = (\mathbf{a}_1 - \mathbf{a}_2)\Delta v_1 \quad (8)$$

$$comp_c = \Delta e_c = (\mathbf{a}_1 - \mathbf{a}_2)\Delta e_1 = (\mathbf{a}_1 - \mathbf{a}_2)comp \quad (9)$$

and

$$PVR_c = \frac{comp_c}{\Delta v_c} = \frac{(\mathbf{a}_1 - \mathbf{a}_2)comp}{(\mathbf{a}_1 - \mathbf{a}_2)\Delta v_1} = PVR_1 \quad (10)$$

Equation (10) illustrates that the price of voting rights is independent of who's perspective we adopt. The remaining question is who determines this price: the superior vote stockholders as a group (including also "outside" public investors), or the majority shareholders alone?

#### 2.4. Who determines the price of vote?

The properties of  $\Delta v_c$ , the change in majority shareholders' voting power upon unification, are different than those of  $\Delta v_1$ , the corresponding change in class 1 stockholders' voting power. This is best illustrated by considering the case of  $\mathbf{a}_1 = \mathbf{a}_2$ . If  $\mathbf{a}_1 = \mathbf{a}_2$ , that is if the majority shareholders hold equal proportions of superior and inferior vote stocks, then  $\Delta v_c$  is zero regardless of the compensation to the superior vote (class 1) stocks. For example, if the majority shareholders holds 70% of the inferior vote stocks and 70% of the superior vote stocks, its share in firm vote and equity would remain 70%, regardless of the compensation paid.

In such a case (of  $\mathbf{a}_1 = \mathbf{a}_2$ ), the majority shareholders would definitely prefer zero compensation because they would not lose any voting power and because unifications with zero compensation are quicker and cheaper. Unifications without compensation also receive better public relations and some sympathy from the Israeli Securities Authority because of the public's impression that the majority owners gave up one of their superior rights for free.

Alas, these zero compensation unifications are always against the interests of the superior-vote (class 1) stockholders as a group because in such unifications stockholders who

own only class 1 shares lose voting power without any compensation. Evidently, there exist conflicts of interest between the majority shareholders and some of the superior vote (class 1) stockholders. If majority shareholders dominate the unification decision, there would be no compensation when the majority shareholders are not hurt at all or are not hurt much by a zero compensation unification. This happens when  $\mathbf{a}_1 > \mathbf{a}_2$  (in which case the majority shareholders' voting power increases following a zero-compensation unification), when  $\mathbf{a}_1 = \mathbf{a}_2$  ( $\Delta v_c = 0$ ), and when  $\mathbf{a}_1 > \mathbf{a}_2$  (majority shareholders lose vote) but the loss in voting power is not large enough to justify a costly compensation process. In contrast, if unifications were sales of voting rights by class 1 stockholders, compensation would always be positive and would not depend on  $\mathbf{a}_1$  or  $\mathbf{a}_2$ .

We hypothesize that the majority shareholders dominate the unification decision, i.e., that the correct view is that unifications are sales of vote by majority holders to the rest of the stockholders. This hypothesis' first implication is

*Implication 1: Existence of compensation.*

The decision on whether or not to compensate superior vote stockholders upon dual class unification depends on  $\mathbf{a}_1$  and  $\mathbf{a}_2$  (the proportion of superior and inferior class stocks held by the majority shareholders). If the majority shareholders own a higher proportion of the inferior class stock, an equal proportion of both stock classes, or a slightly higher proportion of the superior class stock, unifications would most likely proceed without any compensation.

If compensation is paid, then our majority shareholders' dominance hypothesis suggests that total compensation would increase with the vote lost by majority shareholders. The price of

vote, PVR, is also likely to increase with majority shareholders' vote loss because large losses of voting power are more threatening for majority shareholders – bring them closer to losing control. This motivates

*Implication 2: Magnitude of compensation.*

The compensation offered to superior vote stockholders upon unification increases with the vote loss of majority holders. The price of vote, defined as the compensation per 1% of vote lost, also increases with majority shareholders' vote loss.

Finally, it is unlikely that the majority holders can use unification to bluntly increase their share in firm's market value. This is because of the ISA persistence on "full disclosure" and because of the extensive prior negotiations with major inferior vote stockholders such as mutual, and pension funds. There is anecdotal evidence about mutual funds objecting the terms of unification and lowering the compensation to superior vote stocks. The majority shareholders' motives also appear fairly innocuous. In about half of the cases unifications preceded seasoned equity offers, and these new equity offers were probably the main target of the majority shareholders at the time.<sup>2</sup> In other cases, unifications were probably intended to draw positive public opinion and investors' interest. In fact, unifications became a "fad" among dual class stock firms.

The above discussion suggests

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<sup>2</sup> Recall that the 1990 amendment to the law and new exchange regulations practically forced issuing firms to unify their dual class stocks.

*Implication 3: Wealth effects.*

On average, the share of majority holders in the market value of firm's equity does not change significantly following the unification. In general, unifications do not serve majority holders to expropriate other shareholders.

Testing implication 3 requires a definition of the wealth gains and losses of the majority shareholders. Let:

$V_i$  = total market value of stock class  $i$ ,

$s$  = the majority holders' share in firm market value,

and recall our previous notation. The majority holders' pre-unification wealth is  $\mathbf{a}_1 V_1 + \mathbf{a}_2 V_2$ , and their initial share in the firm's market value is:

$$s(\text{before}) = \frac{(\mathbf{a}_1 V_1 + \mathbf{a}_2 V_2)}{V_1 + V_2} \quad (11)$$

The majority holders' post-unification share in the firm is:

$$s(\text{after}) = \frac{[\mathbf{a}_1 (N_1 + COMP) + \mathbf{a}_2 N_2]}{(N_1 + N_2 + COMP)} \quad (12)$$

and the change in majority owners' share,  $\Delta s = s(\text{after}) - s(\text{before})$ , is:

$$\Delta s = \frac{[\mathbf{a}_1 (N_1 + COMP) + \mathbf{a}_2 N_2]}{(N_1 + N_2 + COMP)} - \frac{(\mathbf{a}_1 V_1 + \mathbf{a}_2 V_2)}{V_1 + V_2} \quad (13)$$

Implication 3 suggests that  $\Delta s$ , as calculated by equation (13), would be close to zero on average.

In Appendix B we calculate the "fair compensation" from the superior vote stockholder's perspective, where "fair compensation" is defined as the unification compensation (in % of firm

equity) that preserves the superior vote stockholders' wealth. The expression developed in the Appendix B for "fair compensation", *faircomp*, is:

$$faircomp = w_1 - e_1(before) \quad (14)$$

where:  $w_1$  = the share of stock class 1 in the total market value of both stock classes before the unification.

It would be interesting to examine empirically how actual compensation compares with the *faircomp* of equation (14). If our majority shareholders' dominance hypothesis were true, actual compensation could deviate considerably from *faircomp*, the fair compensation from the superior vote stockholders' viewpoint.

### ***3. Data and sample description***

In the period 1990-1996 there were 70 dual class stock unifications on the Tel-Aviv Stock Exchange, 67 of which are included in the sample. Three firms were excluded because the superior class stocks had preference in vote on only a number of pre-specified issues such as takeover decisions and/or Chief Executive Officer appointments. Data on the unification date, equity structure, and compensation are extracted from firms' unification reports to the ISA. Stock price and accounting data are also taken from the databases of ISA.

Stock ownership data are collected from "Meitav Stock Guide", and "Holdings of Interested Parties" (a more detailed Tel-Aviv Stock Exchange official publication, first appearing in 1991). These publications list for each exchange-listed firm the holdings of its "interested parties". Interested parties are defined as individuals and companies owning more than 5% of the

firm vote or equity, every family or business-relative of the above (for example, daughter or subsidiary), and company officials (executives and directors). The sum of all “interested party” holdings, at the end of the year preceding the unification, is our measure of the majority group holdings.

Table 1 presents descriptive statistics on the sample firms at the end of the year preceding the unification. The mean total assets is 581 million New Israeli Shekels (about 232 million dollars, given an average exchange rate during the sample period of 2.5 NIS per \$), but the median is 94 million NIS only. The mean leverage (debt divided by total assets) is 58%. About two-thirds of the firms had positive earnings in the year preceding the unification, and the median Return on Equity is 4%. The mean market over book value of equity is 1.93 (median is 1.36).

(Insert Table 1 about here)

An overview of the control structure of the sample firms shows that they are closely held. On average, the majority shareholders own 87.2% of the superior vote stocks and 64.6% of the inferior vote stocks. The majority shareholders’ average voting power is 76.7%, and their mean share in equity is 71.3%. The finding that the majority shareholders also hold a considerable proportion of the inferior vote stocks is not unique to Israel. Bergstrom and Rydqvist (1990) report a similar result for Sweden, and interpret it as evidence against the hypothesis that majority holders simply wish to expropriate inferior-vote stockholders.

A look at the superior-vote stock statistics in Table 1 shows that superior-vote stocks’ average share in vote is 61.1%, while their average share in equity book value (and dividends) is 32.8% only. This illustrates the central role of superior vote stocks in firm control and decision

making, and the central role of inferior vote stocks in capital supply. The mean price premium of superior vote (over inferior vote) stocks is 50%, which is comparable with previous results on Israel (Levy, 1983). The median premium is, however, 21% only, which is more comparable with existing premia in other countries.

## ***4. Empirical results***

### **4.1. Loss in voting power and compensation**

Table 2 summarizes the loss of voting power and the compensation in dual class stock unifications. Thirty-five of the sample firms (52%) compensated their superior vote stockholders and 32 (48%) did not. The overall sample statistics in panel A show that each superior vote stockholder received on average 0.157 additional stocks as compensation. The superior vote stockholders' average loss in voting power is 26.1%, and their average compensation in percent of firm book equity is 2.22%. Dividing the average compensation (2.22%) by the average loss in voting power (26.1%) we get an estimate of PVR, the price or value of voting rights, equal to 0.09. Direct estimation of PVR in each of the 67 unifications also yields an average of 0.09 – see the bottom line in panel A. Thus, superior vote stockholders received on average 0.09% of firm equity for each 1% of vote lost.

(Insert Table 2 about here)

It could be argued that the value of voting rights should be calculated only from the cases where compensation was granted. In unifications without compensation, there may have been other reasons for giving up the superior vote status for free. Specifically, the costs in money and

time delays of unifications with compensation, and the positive public relations effect of unifications without compensation (especially before a new equity offer) might be sufficient reasons for announcing a unification without compensation. Thus, true transactions of selling voting power for additional equity took place only in unifications with compensation.

Panel B of Table 2 reviews the 35 unifications with compensation. The average compensation to superior vote stockholders is 4.24% and their average loss in voting power is 23.5%, which yields a PVR estimate of 0.18. Direct estimation, summarized in the bottom row of panel B, finds an average PVR of 0.17, a median of 0.10, an interquartile range of 0.02 to 0.24, and a maximum PVR of 0.86.

In sum, the evidence in Table 2 indicates that a typical price of 1% vote is about 0.1% of firm's equity. It is noteworthy that in only two of the 67 sample firms the majority shareholders lost their majority vote following the unification. The number of firms where the majority holders control less than 50% of the vote increased from 5 in the pre-unification period to 7 in the post-unification period. Thus, the value of voting rights in this study is not calculated based on extreme control transfer situations.

#### **4.2. Tests of the majority shareholders' dominance hypothesis: When is compensation offered?**

Table 3 contrasts firms that compensated superior vote stockholders with those that did not. General firm characteristics such as size, leverage and profitability are not significantly different between compensating and non-compensating firms. The main apparent difference is in the governance structure. In firms with compensation, majority shareholders owned a

significantly higher proportion of the superior vote stocks and a significantly lower proportion of the inferior-vote stocks. Thus, the gap between majority holders' share in superior- and inferior-vote stocks ( $\mathbf{a}_1 - \mathbf{a}_2$  in our notation) is significantly higher in compensating firms. Further, in compensating firms, majority holders lost significantly more votes upon unification, which may explain why compensation was needed. Overall, the evidence in Table 3 supports our choice to focus attention on governance structure variables.

(Insert Table 3 about here)

The central hypothesis of the study is that the majority shareholders dominate the unification process and determine the compensation or price per vote. Implication 1 of the hypothesis (in section 2.4) predicts that when  $\mathbf{a}_1$  (the share of the majority holders in the superior vote stocks) is lower or close to  $\mathbf{a}_2$  (their share in the inferior vote stocks), the majority shareholders prefer (and there would be) a unification without compensation. This is because under such circumstances the majority shareholders do not need compensation – their share in vote increases or does not change significantly even when the unification does not include any compensation.

Table 4 tests this prediction. Implication 1 is borne out by the data. As shown in panel A, when  $\mathbf{a}_1 - \mathbf{a}_2$  is negative or trivial (less than 2%) compensation is a rarity and only 12.5% of the unifications offer compensation. As  $\mathbf{a}_1 - \mathbf{a}_2$  increases, compensation becomes a norm. Twenty-six (76.5%) out of the 34 firms with  $\mathbf{a}_1 - \mathbf{a}_2$  at or above the median offered compensation upon unification. The percentage of compensating firms varies significantly across the  $\mathbf{a}_1 - \mathbf{a}_2$  quartiles,

as is evidenced by the standard frequency-table Chi-Square test statistic of 19.4 (p-value of 0.001) reported in panel A.

(Insert Table 4 about here)

Further examinations of the mean price of vote (PVR) in the last column of panel A reveal the same phenomenon. When  $\mathbf{a}_1 - \mathbf{a}_2$  is above its median the average price of vote is more than double the respective average price of vote when  $\mathbf{a}_1 - \mathbf{a}_2$  is below median. The differences across  $\alpha_1$ - $\alpha_2$  quartiles are statistically significant at the 0.001 level, using the nonparametric Kruskal-Wallis test. Nonparametric tests are preferred because the distribution of compensation is non-Normal (about half of the unifications had zero compensation). As a summary of panel A, the Spearman (rank) correlation of  $\mathbf{a}_1 - \mathbf{a}_2$  with the price of vote is calculated. This Spearman correlation equals 0.52 and its p-value is below 0.001. It appears that compensation upon unification depends on the majority shareholders' interests.

The majority shareholders' dominance impression is further reinforced when the relation of compensation to  $\Delta v_c$  (the majority shareholders' loss in voting power) is examined – see panel B of Table 4. When  $\Delta v_c$  is relatively low (below its median) 30% of the unifications included compensation, and when  $\Delta v_c$  is above median 74% of the unifications included compensation. Thus, when the loss in majority shareholders' voting power was small, a minority of the firms offered compensation, and when majority shareholders' vote loss was relatively large a majority of the firms offered compensation. The average price of vote, shown on the last column of panel B, increases monotonically with  $\Delta v_c$ , and the Spearman correlation of  $\Delta v_c$  with the price of vote is 0.55 with a p-value below 0.001.

Panel C completes the picture by examining the superior vote stockholders' position. It is found that superior vote stockholders' compensation is inversely related to their loss of vote. When superior vote stockholders' loss in voting power ( $\Delta v_1$ ) was relatively large, less than half of the firms offered unification compensation, and when their loss in voting power was relatively small, a majority of the firms offered compensation. The Spearman correlation between the voting power loss of superior vote stocks and the price of vote is negative with a p-value of 0.03. Evidently, superior vote stockholders as a group do not influence much the compensation upon unification, which supports the majority shareholders' dominance hypothesis.

### 4.3. Determinants of the Price of Vote

Implication 2 of the majority shareholders' dominance hypothesis proposes that the price of vote increases with the vote lost by majority shareholders. This suggests that in the formulation  $\Delta e_c = \alpha \Delta v_c^\beta$ , where  $\Delta e_c$  ( $\Delta v_c$ ) equals the increase (decrease) in majority shareholders' percentage of equity (vote) upon unification, the exponent  $\beta$  is significantly larger than 1. We examine this issue by fitting a regression model of the form

$$\text{Ln}(PVR) = a + b \text{Ln}(\Delta v_c) \quad (15)$$

where  $PVR = \Delta e_c / \Delta v_c$  is the price of vote. If the price of vote increases with the voting power loss,  $b$ , the coefficient of  $\text{Ln}(\Delta v_c)$  in equation (15), is significantly larger than zero. Because of the logarithmic formulation of the dependent and independent variables, the regression is run on a subsample of 33 unifications with compensation in which both  $PVR$  and  $\Delta v_c$  are positive.

Table 5 presents the regression results. The coefficient of  $\text{Ln}(\Delta v_c)$  is significantly positive. It appears that the larger is the voting power loss of the majority shareholders, the higher is the price of vote (the compensation per 1% vote lost). An analysis of the relation between the price of vote and the voting power lost by superior vote stockholders yields similar results – see the second regression in Table 3. The price of vote appears to increase as superior-vote-stockholder loss of vote increases. However, when we regress  $\text{Ln}(PVR)$  on both  $\text{Ln}(\Delta v_c)$  and  $\text{Ln}(\Delta v_1)$ , only the coefficient of  $\text{Ln}(\Delta v_c)$  is statistically significant and the adjusted  $R^2$  is similar to that of the regression of  $\text{Ln}(PVR)$  on  $\text{Ln}(\Delta v_c)$  alone. This suggests that the price of vote is more strongly related to the majority shareholders' loss in vote.

(Insert Table 5 about here)

Further examinations add two observations. First, the relation of  $\text{Ln}(PVR)$  to  $\text{Ln}(\Delta v_c)$  may be nonlinear. When  $[\text{Ln}(\Delta v_c)]^2$  is added to the regression, its coefficient is positive and marginally significant at the 10% level. The price of vote appears to increase more steeply as the vote loss increases. Second, the relatively modest adjusted  $R^2$ 's of the price of vote regressions are somewhat deceptive. The relation between the compensation offered and the vote lost is strong. A regression of  $\text{Ln}(\text{compensation to majority shareholders})$  on  $\text{Ln}(\text{vote lost by majority shareholders})$  has an adjusted  $R^2$  of 76%. Figure 1 depicts the clear relation between compensation and the majority shareholders' vote loss.

(Insert Figure 1 about here)

Table 6 investigates the impact of institutional holdings on the price of vote. We define institutional holdings as holdings of mutual funds, pension funds, provident funds, and education

funds. Institutional investors owned on average 3.1% of the superior vote stocks and 8.7% of the inferior vote stocks. Hence, institutional investors had an incentive to oppose “excessive” compensation to superior vote stocks. This opposition potential was anticipated. In practice, negotiations between the firm and its institutional investors preceded many unifications.<sup>3</sup>

The marks of institutional investors are apparent in the data. When DUMINST, a dummy variable for institutional investors, is added to the PVR regressions of Table 5, its coefficient is negative (-1.25) and statistically significant – see Table 6. All other things equal, the indication is that institutional investors’ presence cuts the price of vote by approximately 70%. This result is robust to the definition of the institutional investors’ dummy. We have classified DUMINST as 1 whenever institutional investors hold (together) at least 5% of either the superior- or inferior-vote stocks. This 5% threshold is meant to distinguish significant holdings by institutions from temporary insignificant holdings. Anyway, an alternative definition, setting DUMINST to 1 when there is at least 1% institutional ownership in either the inferior or the superior vote stocks, yields a negative (-1.35) and statistically significant DUMINST coefficient as well.

(Insert Table 6 about here)

A refinement of the “institutional opposition” hypothesis is possible. Institutions have an incentive to oppose compensation only when their holdings in inferior vote stocks are higher than their holdings in superior vote stocks. We construct DUMDINST, which equals 1 only if the difference between the % of inferior vote stock and the % of superior vote stock held by institutions is 5% at least. DUMDINST is highly correlated with DUMINST because it equals 1

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<sup>3</sup> It can be argued that institutional investors’ power in Israel is strong relative to other economies. This is because most of the pension, provident, education, and mutual funds are subsidiaries (and important profit centers) of the

in 33 out of the 40 firms for which DUMINST equals 1 (and it equals 0 for all firms in which DUMINST=0). Nevertheless, it fits the data better. The coefficient of DUMDINST is negative (-1.40) and statistically significant, implying that all other things equal institutional investors (potential) resistance reduces the compensation per 1% vote by about  $\frac{3}{4}$ .<sup>4</sup>

Another factor that might have affected the eventual price of vote was company plans for a seasoned public offer. In the beginning of the 1990s the Tel-Aviv Stock Exchange was booming, and time was ripe for issuing stocks. Firms with dual class stocks wishing to raise capital in the hot issues market were not allowed to issue inferior vote stocks, and elected to unify their stocks before the equity offer. To expedite the process some of these firms might have sold the superior voting rights at a discount.

This prediction is supported by the data. We construct DUMSPO, a dummy variable equal to 1 if the company had a seasoned public offer after the unification, and added it to the regression – see Table 6. The coefficient of DUMSPO is negative and statistically significant. Evidently, vote was sold at a discount (underpriced?) when the company planned an equity offering.

The explanatory power (adjusted- $R^2$ ) of the voting power loss, the institutional holdings dummy and the seasoned public offering dummy with respect to the price of vote is over 50%. Even more impressive, voting power loss, institutional holdings and secondary offers can explain

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large banks. Thus, the relative small institutional investor holdings reported above under-represent their true impact.

<sup>4</sup> We have attempted regressions that include both DUMINST and DUMDINST as explanatory variables, but ran into multicollinearity problems. Similarly, when DINST, the difference in % institutional holdings between inferior and superior vote stocks, was added to a regression that includes DUMINST, severe multicollinearity problems arise.

87% of the cross-sectional variability in the compensation received by majority shareholders upon unification – see our bottom-line regression in Table 6.

It is nevertheless interesting to investigate whether other variables also affect the price of vote. Several firm characteristics such as size, leverage, growth opportunities, profitability, and dividend policy have been linked in the past to agency-type behaviors and private benefits, which are a major source of value of vote. Can these characteristics offer additional explanatory power?

We added  $\ln(\text{total assets})$ ,  $\ln(\text{debt/assets})$ ,  $\ln(\text{market/book value})$ ,  $\ln(\text{return on equity})$ , and a dummy variable for dividend distributions to the  $\ln(\text{price of vote})$  regressions of Table 6 (the regressions that include vote loss, the institutional holdings dummy and the seasoned equity offering dummy as explanatory variables). When we add each characteristic separately, only  $\ln(\text{market/book value})$  scores a positive and marginally significant coefficient (a t-statistic of 1.9). When all five characteristics are added together, none of them approaches statistical significance.

Before concluding the price of vote examinations, it is appropriate to discuss the limitations of our estimates. The assessed price of vote is not a classical open-market Walrasian auction price. Rather, it is a negotiated price between the firm (majority shareholders) and inferior vote stockholders (institutional investors), with the addition of a court of law and the Israel Securities Authority's oversight. The negotiated price is clearly noisy. However, it also is our best approximation and first intra-firm evidence on the value of vote.

#### 4.4. Wealth effects

According to Implication 3 of the majority shareholders' dominance hypothesis, on average, the share of majority holders in the market value of firm equity does not change significantly upon unification. To test this implication we need pre-unification market values of both stock classes. Such data are available only for 40 firms because 27 of our 67 firms had only the inferior vote stocks traded on the exchange. The sample size is further reduced to 39 because pre-unification market value of equity was calculated a year before the unification, and one firm had a lengthy trade halt around that date. Market value data from a year before the unification are used because they most probably precede the unification announcement. It is possible that unification announcements changed superior vote stock prices and their share in the market value of equity. Hence, the "correct" pre-unification situation is estimated at a safe distance before the unification.

Implication 3 appears consistent with the data. As shown in Table 7, on average, the pre- and post-unification shares of the majority holders in the market value of firm's equity are almost identical. The mean majority holders' share change (after minus before) is  $-0.52\%$  and the median is  $-0.03\%$ . On average, the majority holders did not gain or expropriate the other stockholders upon unification. Thus, it appears that in general the purpose of unification was to facilitate a future stock issue or to generate positive public atmosphere about the stock.

(Insert Table 7 about here)

As usual, the superior-vote stockholder's perspective is different. According to our calculations, superior vote stockholders as a group received less than fair compensation, that is

the superior vote stockholders' share (in the market value of firm equity) declined following the unification. The mean compensation that would have preserved superior vote stockholders' share was 7.54% of firm equity (see *Faircomp* in Table 7), while actual compensation was significantly lower, at about 2.50% of firm equity (see *Comp* in Table 7). The difference between fair and actual compensation is economically and statistically significant. As shown in the last row of panel A, in about 80% of the cases, the superior vote stockholders received less than fair compensation, and this proportion is far above 50%, the proportion expected under the null that actual compensation equals fair compensation. The sign test and Wilcoxon signed rank test reject the null of fair compensation to superior vote stockholders with a p-value of 0.001.

For thirty unifications we identified an approximate first announcement date of the unification by reviewing firm reports to the ISA and newspaper reports.<sup>5</sup> For nine unifications we could not identify a reasonably clear first announcement date because in these firms there were many potentially revealing rumors published over a period of several months before the official unification announcement. Announcement dates facilitate a more precise estimation of the pre-unification share of majority holders in the firm.

The thirty-firm sample results, presented in panel B, are similar to the previous results. The share of the majority holders in the market value of equity did not change significantly. The mean majority holders' share increased by 0.01% following a unification, while the median decreased by 0.01%. Similarly, from the perspective of superior vote stockholders, actual compensation was less than fair. The difference between fair compensation and actual

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<sup>5</sup> Announcements by dual class firms of plans to issue equity were also considered as unification announcements.

compensation is economically and statistically significant, and in 80% of the unifications superior vote stockholders received less than fair compensation.

An interesting economic question is why did superior vote stockholders agree to less than fair compensation. One answer may be that not all superior vote stockholders lost. As shown earlier, the majority shareholders did not lose, as their share in the market value of firm equity remained on average unchanged. A puzzle arises: How come the majority shareholders did not lose when the superior vote stockholders lost? The reason is simple. The majority shareholders owned also a considerable proportion of the inferior vote stocks. The majority shareholders needed less compensation than investors who own superior vote stocks only, because part of their losses on superior-vote stocks were offset by the gains from the increase in the relative value of their inferior vote stocks.

Given that the majority shareholders held on average 82% of the superior vote stocks in non-compensating firms – see Table 3, we can immediately deduce that on average at least 82% of the superior vote stockholders (i.e., the majority shareholders) were not hurt. Other superior vote stockholders might have also held some inferior vote stocks. Hence, for many investors, the effect of less than fair compensation was less problematic (if at all).

A second possible explanation for the phenomenon of less than fair compensation to superior vote stockholders involves an analysis of stock prices and stockholders' wealth. To examine the effect of unifications on stock prices we conducted an event study, using the “net of market” method. Assume:

$$R_{it} = R_{mt} + e_{it}$$

where  $R_{it}$  is the return of stock  $i$  on day  $t$ ,  $R_{mt}$  is the TASE value-weighted index return on day  $t$ , and  $e_{it}$  is the excess return of stock  $i$  on day  $t$ . Then, calculate the abnormal return (AR) and the cumulative abnormal return (CAR) as:

$$AR_t = \frac{1}{N} \sum_{i=1}^N e_{it} ;$$

$$CAR_T = \frac{1}{N} \sum_{i=1}^N \left[ \prod_{t=1}^T (1 + e_{it}) - 1 \right]$$

The results of the event study are depicted in Figure 2 where we observe that the market value of equity increased dramatically during the year before the unification. The average abnormal return in the year preceding the unification is about 30%. Perhaps superior vote stockholders did not mind the lower than fair compensation given the sizable excess returns.

(Insert Figure 2 about here)

To obtain a clear picture, we estimate directly the wealth consequences to superior vote stockholders. This assessment process proceeds in two steps, and is run on the sample of 39 unifications where both stock classes traded on the exchange. First, we compute the share of superior vote stockholders in the market value of firm equity before and after the unification. The mean pre-unification share of superior vote stockholders (in the market value of firm equity) is 52.6%, and the median is 49.7%. The post-unification respective figures are 47.6% (for the mean) and 43.7% (for the median). Thus, during the unification, the share of superior vote stockholders (as a group) in the market value of firm's equity decreased by about 5%. This 5% drop is identical (by definition) to the 5% difference between fair and actual compensation noted previously.

Second, pre- and post-unification stockholders' wealth is compared. Before unification the wealth of superior vote stockholders (invested in the firm) was on average  $0.526V_{\text{before}}$ , where  $V_{\text{before}}$  is the total market value of both stock classes and 0.526 is superior vote stocks share in market value – see above. After unification, their wealth was  $0.476V_{\text{after}}$  on average. Thus, post-unification wealth is higher than pre-unification wealth when  $0.476V_{\text{after}} > 0.526V_{\text{before}}$ , or when  $V_{\text{after}}/V_{\text{before}} > 1.105$ . Given the average equity excess return of about 30% it becomes clear that superior vote stockholders experienced abnormal wealth increases from their investment in the stock in the year preceding the unification. It is impossible to determine what fraction of the pre-unification appreciation is due to the unification itself.<sup>6</sup> Yet, it is easy to understand that in such a good year, superior vote stockholders had almost no reason to complain, and did not stir trouble.

The 5% share in stock market value transferred from superior to inferior vote stockholders makes inferior vote stockholders the true winners from unifications. Inferior vote stockholders gained from both the increase in firm value and the increase in their share in equity. This gain is well reflected in Figure 2 where it can be noted that inferior vote stocks had a higher average excess return (than superior vote stocks) in the year before the unification. The difference in average excess returns between inferior and superior vote stocks is however statistically insignificant because of the large cross-sectional standard deviation of excess returns.

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<sup>6</sup> In this context, it is interesting to note that firms that did not issue equity following the unification also recorded an average CAR of about 30% in the year preceding the unification. Thus, the positive CAR in Figure 2 is not due to firms that are on the eve of new equity issues.

## ***5. Conclusions***

The main conclusion of the study is that the value of vote is most accurately assessed when perceived from the perspective of the majority shareholders. We show how the interests and position of majority holders explain best the existence and magnitude of compensation in “pure” voting power transactions – dual class stock unifications.

The study estimates that the median price of 1% of the voting power is about 0.1% of firm’s equity. However, this “ball park” figure must be treated with great care, and cannot be extrapolated. It must be noted that: 1) our vote sale transactions do not transfer control over the firm from one party to another, and 2) we find that the marginal price of vote is increasing with the vote lost by the majority holders. Thus, it appears that we underestimate the value of vote in large corporate control transactions. More evidence is clearly needed.

An interesting observation is that the price of vote, i.e., the compensation to superior vote stocks upon losing their superior vote status, decreases when institutional investors hold some of the firm’s stock. This suggests that institutional investors are instrumental in defending public’s interests in the firm. Without institutional investors the majority shareholders would collect a higher compensation for their vote loss. Institutional holdings appear to offer an externality to small public investors.

## *Appendix A: The majority shareholders' price of vote*

Denote:

$\mathbf{a}_i$  = the share of majority holders in stock class i, and

$v_c$  = the share of the majority holders in total vote.

The number of votes that the majority shareholders have before the unification is  $\alpha_1 N_1 + \alpha_2 N_2 / \gamma$ .

Hence,

$$v_c(\text{before}) = \frac{(\mathbf{a}_1 N_1 + \mathbf{a}_2 N_2 / \mathbf{g})}{(N_1 + N_2 / \mathbf{g})} \quad (\text{A1})$$

similarly,

$$v_c(\text{after}) = \frac{[\mathbf{a}_1(N_1 + \text{COMP}) + \mathbf{a}_2 N_2]}{(N_1 + N_2 + \text{COMP})} \quad (\text{A2})$$

$$\Delta v_c = v_c(\text{before}) - v_c(\text{after}) = \frac{(\mathbf{a}_1 N_1 + \mathbf{a}_2 N_2 / \mathbf{g})}{(N_1 + N_2 / \mathbf{g})} - \frac{[\mathbf{a}_1(N_1 + \text{COMP}) + \mathbf{a}_2 N_2]}{(N_1 + N_2 + \text{COMP})} \quad (\text{A3})$$

or

$$\Delta v_c = \mathbf{a}_1 \Delta v_1 + \mathbf{a}_2 \Delta v_2 \quad (\text{A4})$$

where  $\Delta v_2$  is the change in the voting power of the inferior vote stocks. Since any vote lost by superior vote stocks goes to inferior vote stocks,  $\Delta v_2 = -\Delta v_1$ , and

$$\Delta v_c = (\mathbf{a}_1 - \mathbf{a}_2) \Delta v_1 \quad (\text{A5})$$

The majority holders' shares in firm equity before and after the unification are:

$$e_c(\text{before}) = \frac{(\mathbf{a}_1 N_1 + \mathbf{a}_2 N_2)}{(N_1 + N_2)} \quad (\text{A6})$$

$$e_c(\text{after}) = \frac{[\mathbf{a}_1(N_1 + \text{COMP}) + \mathbf{a}_2 N_2]}{(N_1 + N_2 + \text{COMP})} \quad (\text{A7})$$

Thus,  $\text{comp}_c$ , the compensation to the majority shareholders in terms of proportion of equity is:

$$\text{comp}_c = e_c(\text{after}) - e_c(\text{before}) = \frac{[\mathbf{a}_1(N_1 + \text{COMP}) + \mathbf{a}_2 N_2]}{(N_1 + N_2 + \text{COMP})} - \frac{(\mathbf{a}_1 N_1 + \mathbf{a}_2 N_2)}{N_1 + N_2} \quad (\text{A8})$$

or

$$\text{comp}_c = \Delta e_c = \mathbf{a}_1 \Delta e_1 + \mathbf{a}_2 \Delta e_2 \quad (\text{A9})$$

Since any equity share lost by one stock class goes to the other  $\Delta e_2 = -\Delta e_1$ , and

$$\text{comp}_c = \Delta e_c = (\mathbf{a}_1 - \mathbf{a}_2) \Delta e_1 = (\mathbf{a}_1 - \mathbf{a}_2) \text{comp} \quad (\text{A10})$$

Thus, the Price of Voting Rights as perceived by the majority shareholders ( $\text{PVR}_c$ ) is:

$$\text{PVR}_c = \frac{\text{comp}_c}{\Delta v_c} = \frac{(\mathbf{a}_1 - \mathbf{a}_2) \text{comp}}{(\mathbf{a}_1 - \mathbf{a}_2) \Delta v_1} = \text{PVR}_1$$

## ***Appendix B: The superior vote stockholder's perspective on fair compensation***

Let:

$P_i$  = the pre-unification price of stock class  $i$  ( $i=1$  for the superior vote stocks, and  $i=2$  for the inferior vote stocks),

$V$  = total market value of both stock classes,

$N_i$  = number of stocks in stock class  $i$ ,

$w_i$  = share of stock class  $i$  in total market value of both stock classes,

$e_i$  = share of stock class  $i$  in firm equity, and

$COMP$  = total number of class 1 stocks granted as compensation.

Now, consider the position of an investor who owns one superior vote stock. Assuming equity value ( $V$ ) does not change, stock prices before and after unification are:

$$P_1(\text{before}) = w_1 \frac{V}{N_1} \quad (\text{B1})$$

and

$$P_1(\text{after}) = \frac{V}{(N_1 + N_2 + COMP)} \quad (\text{B2})$$

The value of the investor's position before unification is  $P_1$  (before), and the value after unification is  $P_1$  (after)  $(1+COMP/N_1)$ .

If the investor receives fair compensation then his wealth is preserved, i.e.,

$$w_1 \frac{V}{N_1} = (1 + FAIRCOMP / N_1) \frac{V}{(N_1 + N_2 + FARICOMP)} \quad (B3)$$

In the above equation *FAIRCOMP* replaced *COMP* because compensation was assumed to be fair. Upon manipulation of this wealth equality equation,

$$w_1 = \frac{N_1 + FAIRCOMP}{(N_1 + N_2 + FARICOMP)} = e_1(after) = e_1(before) + faircomp \quad (B4)$$

where *faircomp* is the compensation in percentage of firm equity that preserves superior vote stockholders wealth. Rearranging, we get:

$$faircomp = w_1 - e_1(before) \quad (B5)$$

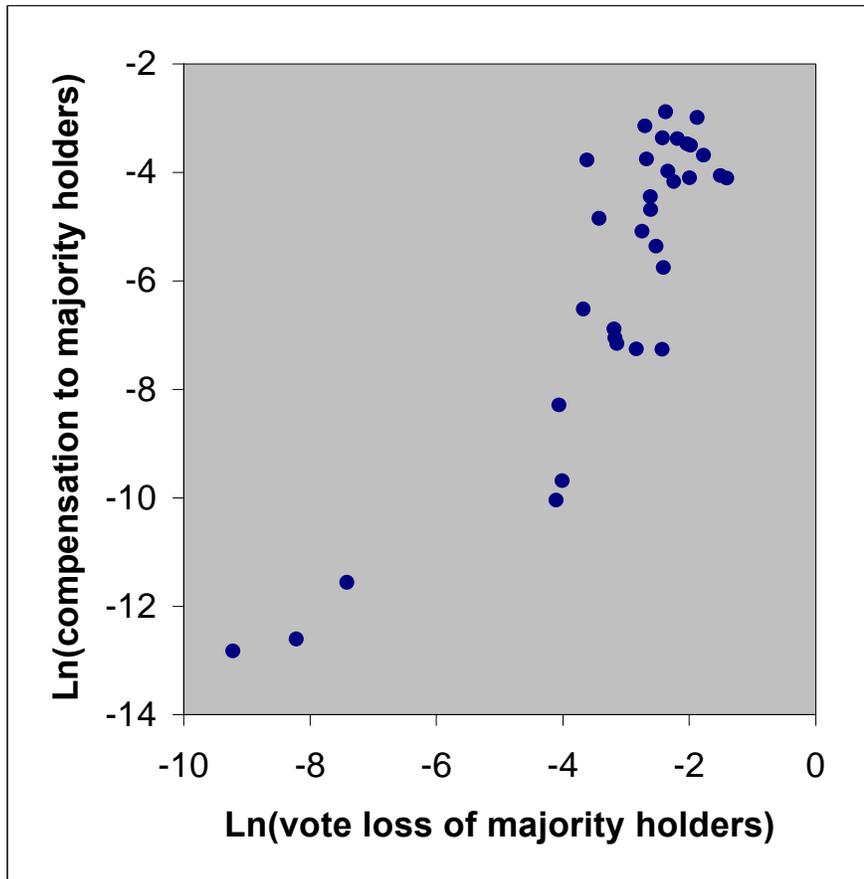
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**Figure 1: The compensation for the vote lost upon dual class stock unifications**

The natural logarithm of the compensation to majority shareholders, measured as a proportion of firm equity, is plotted against the natural logarithm of their vote loss, measured as a proportion of total vote. The sample includes 33 firms for which both the vote loss and unification compensation are positive.



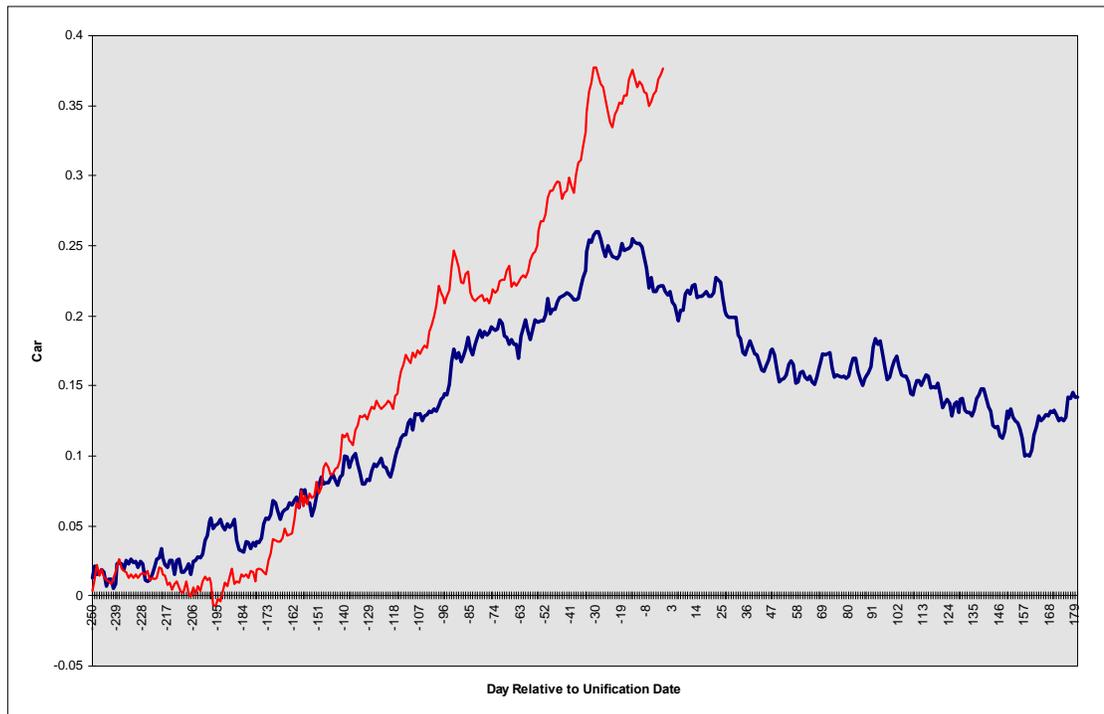
**Figure 2: Average cumulative excess returns around the unification date**

Average cumulative excess returns (CARs) are calculated for 30 firms that unified their dual class stocks. Separate lines depict the CARs of the inferior vote stocks (thin line) and the superior vote stocks (thick line). The “net of market” method is used:

$$AR_t = \frac{1}{N} \sum_{i=1}^N e_{it} ;$$

$$CAR_T = \frac{1}{N} \sum_{i=1}^N \left[ \prod_{t=1}^T (1 + e_{it}) - 1 \right]$$

where  $e_{it} = R_{it} - R_{mt}$  is the excess return of stock  $i$  on day  $t$ ,  $R_{it}$  is the return of stock  $i$  on day  $t$ , and  $R_{mt}$  is the return of the Tel-Aviv Stock Exchange value-weighted index on day  $t$ .



**Table 1: Pre-Unification Descriptive Statistics for the Sample of 67 Firms**

|                                                      | Mean  | Median | Standard<br>Deviation | Minimum | Maximum |
|------------------------------------------------------|-------|--------|-----------------------|---------|---------|
| <u>Firm characteristics<sup>a</sup></u>              |       |        |                       |         |         |
| Total assets (in million NIS) <sup>b</sup>           | 580.9 | 94.4   | 1886.4                | 1.4     | 14609   |
| Debt/total assets                                    | 0.582 | 0.603  | 0.294                 | 0.003   | 2.629   |
| Market to book value                                 | 1.93  | 1.36   | 2.51                  | -3.33   | 18.24   |
| <u>Majority holders<sup>a</sup></u>                  |       |        |                       |         |         |
| Share in total vote                                  | 76.7% | 78.8%  | 14.2%                 | 28.4%   | 99.7%   |
| Share in book equity                                 | 71.3% | 72.2%  | 15.3%                 | 24.1%   | 99.1%   |
| Share in superior-vote stocks                        | 87.2% | 89.2%  | 13.8%                 | 46.1%   | 100%    |
| Share in inferior-vote stocks                        | 64.6% | 66.5%  | 21.2%                 | 4.7%    | 99%     |
| <u>Superior-vote stocks<sup>a</sup></u>              |       |        |                       |         |         |
| Share in total vote                                  | 61.1% | 71.4%  | 29.2%                 | 0.01%   | 99.5%   |
| Share in book equity                                 | 32.8% | 33.3%  | 24.9%                 | 0.01%   | 98.7%   |
| Price premium over inferior-vote stocks <sup>c</sup> | 50.4% | 21.0%  | 67.7%                 | -9%     | 307%    |

<sup>a</sup> Calculated at the end of the year preceding the unification.

<sup>b</sup> NIS (New Israeli Shekels) is the local currency. During the sample period \$1  $\cong$  2.5 NIS.

<sup>c</sup> Calculated a year before the unification, using a sample of 39 firms. Only 39 of our 67 firms had both stock classes actively traded on the Tel-Aviv Stock Exchange a year before the unification.

**Table 2: Loss in Voting Power and Compensation Upon Unification**Panel A: Overall sample ( $N = 67$ )

|                                                                                      | Mean  | Median | Standard deviation | Minimum | Maximum |
|--------------------------------------------------------------------------------------|-------|--------|--------------------|---------|---------|
| Superior-vote stocks' decline in voting power (voting % before minus voting % after) | 26.1% | 28.5%  | 12.7%              | 0.02%   | 50%     |
| Majority shareholders' loss of voting power (voting % before minus voting % after)   | 4.6%  | 3.0%   | 6.3%               | -9.5%   | 24.4%   |
| Compensation in number of additional stocks per one superior-vote stock held         | 0.157 | 0.028  | 0.257              | 0       | 1.00    |
| Compensation as a % of book equity                                                   | 2.22% | 0.01%  | 4.0%               | 0       | 17.1%   |
| Price of Voting Rights (compensation divided by vote loss)                           | 0.09  | 0.003  | 0.17               | 0       | 0.86    |

Panel B: Unifications with compensation ( $N = 35$ )

|                                                                                      | Mean  | Median | Standard deviation | Minimum | Maximum |
|--------------------------------------------------------------------------------------|-------|--------|--------------------|---------|---------|
| Superior-vote stocks' decline in voting power (voting % before minus voting % after) | 23.5% | 24.4%  | 12.9%              | 0.02%   | 50%     |
| Majority shareholders' loss of voting power (voting % before minus voting % after)   | 7.5%  | 6.9%   | 6.1%               | -0.2%   | 24.4%   |
| Compensation in number of additional stocks per one superior-vote stock held         | 0.300 | 0.185  | 0.290              | 0.022   | 1.00    |
| Compensation as a % of book equity                                                   | 4.24% | 2.73%  | 4.7%               | 0.001%  | 17.1%   |
| Price of Voting Rights (compensation divided by vote loss)                           | 0.17  | 0.10   | 0.21               | 0.003   | 0.86    |

**Table 3: Comparing Unifications With and Without Compensation**

|                                                                | Unifications With Compensation (n=35) |        | Unifications Without Compensation (n=32) |        | <i>p</i> -value of the difference using the Kruskal Wallis test of equality |
|----------------------------------------------------------------|---------------------------------------|--------|------------------------------------------|--------|-----------------------------------------------------------------------------|
|                                                                | Mean                                  | Median | Mean                                     | Median |                                                                             |
| <u>Firm characteristics<sup>a</sup></u>                        |                                       |        |                                          |        |                                                                             |
| Total Assets (in million NIS) <sup>b</sup>                     | 964.4                                 | 147.6  | 161.5                                    | 76.5   | 0.20                                                                        |
| Debt/Total Assets                                              | 0.53                                  | 0.60   | 0.60                                     | 0.62   | 0.40                                                                        |
| Market to Book Value of Equity                                 | 1.89                                  | 1.59   | 1.98                                     | 1.15   | 0.12                                                                        |
| Return on Equity                                               | 0.00                                  | 0.04   | -0.04                                    | 0.04   | 0.80                                                                        |
| Proportion of Firms Paying Dividends                           | 14%                                   |        | 9%                                       |        | 0.54                                                                        |
| Proportion of firms with above 5% institutional holdings       | 66%                                   |        | 53%                                      |        | 0.30                                                                        |
| Proportion of firms with a subsequent equity offering          | 43%                                   |        | 56%                                      |        | 0.28                                                                        |
| <u>Majority holders</u>                                        |                                       |        |                                          |        |                                                                             |
| Share in superior-vote stocks                                  | 92%                                   | 99%    | 82%                                      | 85%    | 0.004                                                                       |
| Share in inferior-vote stocks                                  | 58%                                   | 65%    | 72%                                      | 74%    | 0.005                                                                       |
| Difference between share in inferior- and superior-vote stocks | 34%                                   | 32%    | 10%                                      | 4%     | 0.001                                                                       |
| Share in total vote before unification                         | 76.2%                                 | 78.8%  | 77.2%                                    | 78.4%  | 0.97                                                                        |
| Share in total vote after unification                          | 68.7%                                 | 71.2%  | 75.7%                                    | 77.5%  | 0.07                                                                        |
| Loss of voting power                                           | 7.5%                                  | 6.9%   | 1.5%                                     | 0.7%   | 0.001                                                                       |
| <u>Superior-vote stockholders</u>                              |                                       |        |                                          |        |                                                                             |
| Price premium over inferior-vote stocks <sup>c</sup>           | 68%                                   | 48%    | 41%                                      | 15%    | 0.11                                                                        |
| Loss of voting power                                           | 23.5%                                 | 24.4%  | 28.9%                                    | 35.5%  | 0.01                                                                        |

<sup>a</sup> Calculated at the end of the year preceding the unification.

<sup>b</sup> NIS (New Israeli Shekels) is the local currency. During the sample period \$1  $\cong$  2.5 NIS.

<sup>c</sup> Calculated a year before the unification, using a sample of 39 firms. Only 39 of our 67 firms had both stock classes actively traded on the Tel-Aviv Stock Exchange a year before the unification.

**Table 4: Tests of the Majority Shareholders' Dominance Hypothesis:  
When is Compensation Offered?**

Panel A: the relation of compensation to the initial holdings of majority shareholders

In this panel the sample is partitioned into quartiles of  $\alpha_1 - \alpha_2$  (where  $\alpha_1 - \alpha_2$  is the majority holders' share in superior-vote stocks minus their share in inferior-vote stocks).

|                                                                                                                  | Number of firms<br>with<br>compensation | Number of firms<br>without<br>compensation | Percent of firms<br>with<br>compensation | Average price of vote<br>(compensation divided<br>by vote loss) |
|------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------------------------------|------------------------------------------|-----------------------------------------------------------------|
| $\alpha_1 - \alpha_2 \leq 0.02$                                                                                  | 2                                       | 14                                         | 12.5%                                    | 0.026                                                           |
| $0.02 < \alpha_1 - \alpha_2 \leq 0.2$                                                                            | 7                                       | 10                                         | 41.2%                                    | 0.073                                                           |
| $0.2 < \alpha_1 - \alpha_2 \leq 0.38$                                                                            | 14                                      | 3                                          | 82.4%                                    | 0.135                                                           |
| $0.38 < \alpha_1 - \alpha_2$                                                                                     | 12                                      | 5                                          | 70.6%                                    | 0.123                                                           |
| Chi-Square test of the equality of proportions ( $p$ -value) = 19.4<br>(0.001)                                   |                                         |                                            |                                          |                                                                 |
| Kruskal-Wallis Chi-Square test of the equality of the price of vote ( $p$ -value) <sup>a</sup> = 16.7<br>(0.001) |                                         |                                            |                                          |                                                                 |
| Spearman correlation of $\alpha_1 - \alpha_2$ with price of vote ( $p$ -value) <sup>a</sup> = 0.52<br>(0.001)    |                                         |                                            |                                          |                                                                 |

Panel B: The relation of compensation to the loss in the majority shareholders' voting power

In this panel the sample is partitioned into quartiles of  $\Delta v_c$  (where  $\Delta v_c$  is the majority holders' share in total votes before unification minus their share after unification).

|                                                                                                                  | Number of firms<br>with<br>compensation | Number of firms<br>without<br>compensation | Percent of firms<br>with<br>compensation | Average price of vote<br>(compensation divided<br>by vote loss) |
|------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------------------------------|------------------------------------------|-----------------------------------------------------------------|
| $\Delta v_c \leq 0.1\%$                                                                                          | 5                                       | 11                                         | 31.3%                                    | 0.029                                                           |
| $0.1\% < \Delta v_c \leq 8.8\%$                                                                                  | 5                                       | 12                                         | 29.4%                                    | 0.055                                                           |
| $3\% < \Delta v_c \leq 8.8\%$                                                                                    | 12                                      | 5                                          | 70.6%                                    | 0.103                                                           |
| $8.8\% < \Delta v_c$                                                                                             | 13                                      | 4                                          | 76.5%                                    | 0.169                                                           |
| Chi-Square test of the equality of proportions ( $p$ -value) = 12.7<br>(0.005)                                   |                                         |                                            |                                          |                                                                 |
| Kruskal-Wallis Chi-Square test of the equality of the price of vote ( $p$ -value) <sup>a</sup> = 17.1<br>(0.001) |                                         |                                            |                                          |                                                                 |
| Spearman correlation of $\Delta v_c$ with price of vote ( $p$ -value) <sup>a</sup> = 0.55<br>(0.001)             |                                         |                                            |                                          |                                                                 |

**Table 4: Tests of the Majority Shareholders' Dominance Hypothesis:  
When is Compensation Offered? (Continued)**

Panel C: The relation of compensation to the loss in voting power of superior-vote stockholders

In this panel the sample is partitioned into quartiles of  $\Delta v_1$  (where  $\Delta v_1$  is the share of superior-vote stockholders in total vote before unification minus their share after unification).

|                                                                                                  | Number of firms<br>with<br>compensation | Number of firms<br>without<br>compensation | Percent of firms<br>with<br>compensation | Average price of vote<br>(compensation divided<br>by vote loss) |
|--------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------------------------------|------------------------------------------|-----------------------------------------------------------------|
| $\Delta v_1 \leq 17\%$                                                                           | 9                                       | 7                                          | 56.3%                                    | 0.035                                                           |
| $17\% < \Delta v_1 \leq 28.3\%$                                                                  | 14                                      | 3                                          | 82.4%                                    | 0.245                                                           |
| $28.3\% < \Delta v_1 \leq 36\%$                                                                  | 8                                       | 9                                          | 47.1%                                    | 0.057                                                           |
| $36\% < \Delta v_1$                                                                              | 4                                       | 13                                         | 23.5%                                    | 0.021                                                           |
| Chi-Square test of the equality of proportions ( $p$ -value) =                                   | 12.1<br>(0.007)                         |                                            |                                          |                                                                 |
| Kruskal-Wallis Chi-Square test of the equality of the price of vote ( $p$ -value) <sup>a</sup> = | 17.1<br>(0.001)                         |                                            |                                          |                                                                 |
| Spearman correlation of $\Delta v_1$ with price of vote ( $p$ -value) <sup>a</sup> =             | -0.26<br>(0.03)                         |                                            |                                          |                                                                 |

<sup>a</sup> Nonparametric statistics are used because the distribution of the price of vote is non-Normal.

**Table 5: The Relation Between Compensation and the Voting Power Loss**

We run regression to examine if the price per vote, i.e., the compensation per 1% vote, depends on the loss of vote.  $\Delta e_c$  and  $\Delta e_1$  are the compensation in % of book equity to the majority holders and to the superior vote stockholders, respectively;  $\Delta v_c$  and  $\Delta v_1$  are the corresponding losses in voting power upon unification, in % of total vote; and  $PVR = \Delta e_c / \Delta v_c = \Delta e_1 / \Delta v_1$  is the price of voting rights. The sample comprises 33 firms that compensated their superior vote stockholders.<sup>a</sup> *t*-statistics appear in parentheses below the coefficients.

| Dependent Variable | Intercept       | $Ln(\Delta v_c)$ | $Ln(\Delta v_1)$ | $[Ln(\Delta v_c)]^2$ | Adjusted $R^2$ |
|--------------------|-----------------|------------------|------------------|----------------------|----------------|
| $Ln(PVR)$          | -1.42<br>(-2.9) | 0.38<br>(2.8)    |                  |                      | 0.17           |
| $Ln(PVR)$          | -1.99<br>(-5.3) |                  | 0.31<br>(2.2)    |                      | 0.11           |
| $Ln(PVR)$          | -0.93<br>(-1.4) | 0.83<br>(1.8)    | -0.46<br>(-1.0)  |                      | 0.17           |
| $Ln(PVR)$          | 0.73<br>(0.6)   | 1.52<br>(2.3)    |                  | 0.11<br>(1.8)        | 0.22           |
| $Ln(\Delta e_c)$   | -1.42<br>(-2.9) | 1.38<br>(10.0)   |                  |                      | 0.76           |

<sup>a</sup> Thirty five firms offered compensation to their superior vote stockholders. However, two firms were excluded because of a negative  $\Delta v_c$ . The majority holders in these two firms gained voting power upon unification because of large holdings in inferior vote stocks.

**Table 6: The Effect of Institutional Investors and Company Plans for a Secondary Public Offer on the Price of Vote**

This table extends the regressions in Table 3.  $\Delta e_c$  is the compensation to the majority holders in % of firm's book equity,  $\Delta v_c$  is the corresponding loss in total vote, and  $PVR = \Delta e_c / \Delta v_c$  is the price of voting rights. DUMINST equals 1 for firms where institutional investors hold at least 5% of either the inferior- or superior-vote stocks (DUMINST=0 otherwise). DUMDINST equals 1 for firms where institutional investor holdings of the inferior-vote stock exceeds their superior-vote holdings by at least 5% (DUMDINST=0 otherwise). DUMSPO equals 1 for firms that issued stocks after the dual class unification (and equals zero otherwise). The sample comprises 33 firms that compensated their superior-vote stockholders.<sup>a</sup> *t*-statistics appear in parentheses below the coefficients.

| Dependent Variable | $Ln(\Delta v_c)$ | $[Ln(\Delta v_c)]^2$ | DUMINST         | DUMDINST        | DUMSPO          | Adjusted $R^2$ |
|--------------------|------------------|----------------------|-----------------|-----------------|-----------------|----------------|
| $Ln(PVR)$          | 1.52<br>(2.3)    | 0.11<br>(1.8)        |                 |                 |                 | 0.22           |
| $Ln(PVR)$          | 1.80<br>(3.0)    | 0.14<br>(2.4)        | -1.25<br>(-2.8) |                 |                 | 0.37           |
| $Ln(PVR)$          | 1.72<br>(3.0)    | 0.13<br>(2.4)        |                 | -1.40<br>(-3.4) |                 | 0.42           |
| $Ln(PVR)$          | 1.36<br>(2.5)    | 0.10<br>(1.9)        |                 |                 | -1.50<br>(-3.8) | 0.46           |
| $Ln(PVR)$          | 1.54<br>(3.0)    | 0.12<br>(2.4)        |                 | -0.98<br>(-2.5) | -1.15<br>(-2.9) | 0.54           |
| $Ln(\Delta e_c)$   | 2.54<br>(4.9)    | 0.12<br>(2.4)        |                 | -0.98<br>(-2.5) | -1.15<br>(-2.9) | 0.87           |

<sup>a</sup> Thirty five firms offered compensation to their superior vote stockholders. However, two firms were excluded because of a negative  $\Delta v_c$ . The majority shareholders in these two firms gained voting power upon unification because of large holdings in inferior vote stocks.

**Table 7: Tests of the Majority Shareholders' Dominance Hypothesis: Wealth Effects**

$\Delta s$  is the share of the majority shareholders in firm's market value after unification minus the respective share before unification. *Comp* is the unification compensation to superior vote stockholders as a % of firm book equity. *Faircomp* is the *Comp* that equates the share of superior-vote stockholders (in the firm market value of equity) after the unification to their share before unification (see Appendix B).

**Panel A: Tests based on superior-vote stockholders' wealth a year before unification ( $N = 39$ )**

Forty of our 67 sample firms had their superior vote stock trading on the exchange a year before the unification. However, one stock had a lengthy trade halt, which reduces sample size to 39.

| Variable             | Mean   | Median | Standard deviation | Minimum | Maximum | % positive | <i>p</i> -value of % positive | <i>p</i> -value of Wicoxon signed rank test |
|----------------------|--------|--------|--------------------|---------|---------|------------|-------------------------------|---------------------------------------------|
| $\Delta s$           | -0.52% | -0.03% | 1.6%               | -6.7%   | 1.8%    | 43.6%      | 0.52                          | 0.15                                        |
| <i>Faircomp</i>      | 7.54%  | 4.33%  | 8.45%              | -1.9%   | 33.4%   | 92.3%      | 0.001                         | 0.001                                       |
| <i>Comp</i>          | 2.50%  | 0%     | 4.46%              | 0%      | 17.1%   | 35.9%      | 0.001                         | 0.001                                       |
| <i>Faircomp-Comp</i> | 5.04%  | 2.27%  | 7.74%              | -4.6%   | 27.4%   | 79.5%      | 0.001                         | 0.001                                       |

**Panel B: Tests based on superior-vote stockholders' wealth a week before the unification announcement ( $N = 30$ )**

For 30 out of the 39 firms in the previous panel, we identified an "announcement date", and replicated the analysis using superior-vote stockholder wealth a week before the announcement.

| Variable             | Mean  | Median | Standard deviation | Minimum | Maximum | % positive | <i>p</i> -value of % positive | <i>p</i> -value of Wicoxon signed rank test |
|----------------------|-------|--------|--------------------|---------|---------|------------|-------------------------------|---------------------------------------------|
| $\Delta s$           | 0.01% | -0.01% | 0.9%               | -3.1%   | 1.7%    | 46.7%      | 0.85                          | 0.85                                        |
| <i>Faircomp</i>      | 4.90% | 3.08%  | 5.06%              | -0.62%  | 19.6%   | 96.7%      | 0.001                         | 0.001                                       |
| <i>Comp</i>          | 2.64% | 0%     | 4.80%              | 0%      | 17.1%   | 33.3%      | 0.002                         | 0.002                                       |
| <i>Faircomp-Comp</i> | 2.26% | 2.55%  | 3.76%              | -6.2%   | 9.8%    | 80%        | 0.001                         | 0.001                                       |